# Local Government Policies and Migration: An Analysis for SMSAs in the United States, 1965-1970

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# *LOCAL GOVERNMENT POLICIES AND MIGRATION:*

## *AN ANALYSIS FOR SMSA'S IN THE UNITED STATES, 1965-1970*

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### *Introduction*

As governmental units exercise their taxing, transfer, and expenditure powers, income redistribution and variations in the levels of burdens and benefits from governmental actions are experienced. Given that there is an immense diversity among Standard Metropolitan Statistical Areas (SMSA's) in the pattern of taxation, transfer, and spending policies, it is natural to ask whether this diversity exercises any major impact over the efficient allocation of our scarce resources.

In an attempt to gain insight into the possible economic impact of the diversity of local government policies, this paper will focus upon the sensitivity of human migration to such policies. In particular, the purpose of this paper is to examine the impact, according to race, of local government taxation, income redistribution, and expenditure policies on migration to SMSA's in the United States. The reference time period is 1965-1970. As Tiebout (1956, p. 418) has argued, the " . . . consumer-voter may be viewed as picking that community which best satisfies his preference pattern for public goods." Presumably, " . . . the consumer-voter moves to that community whose local government best satisfies his set of preferences." (1956, p. 418) This paper will operate within this framework to ascertain whether in fact local government policies have a significant impact on migration. If these policies in fact do prove significant, some very important and very basic economic and political issues may need to be faced.

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### *Local Government Policies*

In this paper, local per capita property taxes, local average welfare payments (per recipient), and non-welfare local public expenditures per capita will be treated as the proxy measures of local taxation, transfer, and spending policies.

The analysis in this paper focuses on migration according to race (white and black migrants). Accordingly, it should be noted that there may exist significant differences in the way in which white migrants behave on the one hand and black migrants behave on the other. For example, by-and-large one would expect that, *ceteris paribus,* persons who would be *directly* liable for property taxation would prefer to move to areas with lower property taxes. However, this does not simply imply that we should expect higher property taxes to dissuade migrants. The reason is quite simple. A relatively small protion of blacks own property as compared with their white counterparts. Consequently, while one *might* expect white migrants to be dissuaded at least somewhat by higher property taxes, one probably *should* expect black migrants to be comparatively insensitive to property tax levels. Thus, this paper will argue that white migrants are likely to be sensitive to property tax levels, whereas black migrants are likely to be relatively insensitive to property tax levels.

Consider now the policy of income redistribution through a system of welfare payments. Presumably, a much larger proportion of blacks than of whites is eligible for welfare benefits. Consequently, it may be expected that the level of welfare benefits will act as a stronger attraction to black would-be migrants than to their white counterparts. In addition, by virtue of the fact that welfare benefits represent a redistribution of income from the economically better-off to the economically worse-off, whites may tend to view areas with higher welfare benefits as areas which on average redistribute income from themselves to others. Thus, *ceteris paribus,* the would-be white migrants may be on average expected to gravitate to areas with lower levels of welfare benefits. The present paper in part investigates whether in fact welfare benefits tend to have these opposing effects on white and black migrants.

On the other hand, the higher the per capita level of local government non-welfare spending, presumably the higher the level of general benefits per capita which are derived from such spending. In turn, the higher the level of such spending in an area, the more attractive the area will tend to be to would-be migrants, black and white. However, to the extent that (a) higher per capita local government expenditure levels imply higher levels of tax burdens per capita, and (b) whites view their share of the tax burden as relatively greater per capita than that of blacks, higher levels of per capita local spending may be expected to be more potent an attracting influence on black migrants than on white migrants. In fact, higher levels of per capita nonwelfare public spending may even act as a net deterrent to white migrants. The present paper in part thus seeks to investigate whether in fact the level of per capita local government spending is a more potent positive attraction to black migrants than to white migrants.

### *Investment in Migration*

The conceptual economic framework within which the migration impact of local government policies is to be investigated is one where, following Sjaastad (1962), the migration decision is treated as an investment decision. In particular, an individual will migrate from area *a* to area *b* only if the discounted present value of the expected stream of net benefits from the migration is positive. Accordingly, the migration-investment decision requires the appraisal of all the benefits and of all the

costs associated with the migration. Assuming that all of these costs and benefits can be expressed in pecuniary terms,[1] the migration-investment decision may be expressed mathematically as

$$(1) \qquad Mab > 0 \text{ only if } \sum_{j=1}^{n} \frac{(Bj - Cj)}{(1 + r)^j} > 0$$

where *Mab* denotes migration from area *a* to area *b*, *Bj* represents the total gross value of the benefits expected from migration from area *a* to area *b* in year *j*, *Cj* represents the total gross value of the costs expected from migration from area *a* to area *b* in year *j*, and *r* is the appropriate rate of discount.

## *The Migration Model*

To determine the migration-impact of local government policies within the above framework, the following model of net migration is postulated:

$$(2) \quad Mi = Mi\ (Ti, Wi, Gi, Pi, Yi, Si),$$

where *Mi* is a measure of net migration (in-migration less out-migration) to area *i*, *Ti* measures the per capita level of local property taxes in area *i*,, *Wi* is a measure of average (per recipient) welfare benefits in area *i*, *Gi* represents per capita local non-welfare public expenditures in area *i*, *Pi* is a measure of the level of air pollution in area *i*, *Yi* is a measure of per capita income in area *i*, and *Si* is a measure of the amount of sunshine in the $i^{th}$ area.

The variable *Mi* is used to measure migration of whites on the one hand and of blacks on the other. *Mi* is defined then as the ratio of the net quantity of white migrants or black migrants to SMSA *i* between 1965 and 1970 to the total population of SMSA *i* in 1965. *Mi* is so formulated in order to control for variations in the population among the SMSA's considered. Due to data limitations, *Mi* was computed for only 55 SMSA's.

The variable *Ti* measures the per capita level of local property taxes in SMSA *i* in the year 1967. In accord with the discussion above on local government policies, we would expect that white migrants are sensitive to property tax levels, *ceteris paribus*. Thus, we would expect that for white migration, the following obtains:

$$(3A) \qquad \frac{\partial Mi}{\partial Ti} < 0.$$

Blacks, however, own considerably less property than their white counterparts. Consequently, we would expect, *ceteris paribus*, that black migrants are basically insensitive to property tax levels:

$$(3B) \qquad \frac{\partial Mi}{\partial Ti} \simeq 0.$$

[1] See Bowles (1970), Gatons and Cebula (1972), Riew (1973), Rabianski (1971), Sahota (1968), and Sjaastad (1962).

To measure welfare benefits, *Wi*, data on monthly average payments in the year 1971 to welfare recipients in the form of aid to dependent children by SMSA were gathered. In accord with our earlier remarks, it is argued that, for black migrants, welfare payments overall may represent a form of benefit; thus, for black migrants it is argued that the following obtains:

$$(4A) \qquad \frac{\partial Mi}{\partial Wi} > 0.$$

Since white migrants may overall view welfare benefits as a policy of unfavorable income redistribution, it is argued that for white migrants

$$(4B) \qquad \frac{\partial Mi}{\partial Wi} < 0.$$

To measure *Gi*, data were assembled on total (non-welfare) direct per capita expenditures of local governments in 1967. These expenditures included spending for education, highways, and health and hospitals. In accord with our earlier remarks, *Gi* may represent a form of benefit to black migrants, so that for black migrants

$$) \qquad \frac{\partial Mi}{\partial Gi} > 0.$$

White migrants may well view higher levels of government spending in an area as implying higher levels of tax liabilities, as well as higher levels of benefits. Thus, it is argued *a priori* that

$$(5B) \qquad \frac{\partial Mi}{\partial Gi} \gtreqless 0.$$

To measure air pollution, *Pi*, data were assembled measuring suspended particulate matter by SMSA for the year 1966. Suspended particulate matter consists of micrograms per cubic meter of air of particles of smoke, dust, and fumes and droplets of viscous liquid remaining in the air for varying periods of time. Presumably, higher pollution levels impose greater disutility on individuals in terms of general health and discomfort than do lower pollution levels, *ceteris paribus*. Thus, the following relationship for both white and black migrants may be expected:

$$(6) \qquad \frac{\partial Mi}{\partial Pi} < 0.$$

On the premise that it is most logical to relate white migration to white income levels and black migration to black income levels, the data on per capita income were assembled according to race. In particular, for white migrants the variable *Yi* is the per capita income level of whites in the *i* th SMSA in the year 1969, while for black migrants the variable *Yi* is the per capita income level of blacks in the *i* th SMSA in 1969. In accord with orthodox theory, it is hypothesized

that

$$(7) \qquad \frac{\partial Mi}{\partial Yi} > 0.$$

The variable *Si* is the average proportion of daylight periods when there is sunshine in SMSA *i*. Clearly, the greater the value of *Si*, the greater the average amount of sunshine in the *i* th SMSA. It is hypothesized here that, on average, migrants prefer areas with greater amounts of sunshine to those with less sunshine, *ceteris paribus*. Thus, it is argued that

$$(8) \qquad \frac{\partial Mi}{\partial Si} > 0.$$

Given the above arguments, what is proposed is the estimation of the following regression equation for white migrants and for black migrants:

$$(9) \quad \log Mi = a + b \log Ti + c \log Wi + d \log Gi + e \log Pi + f \log Yi + g \log Si + \mu$$

where *a* is a constant and $\mu$ is a stochastic error term.

## *The Data*

The migration data were obtained from the 1970 *Census of the Population* (1973, Table 15), while the population data were obtained from the *Statistical Abstract of the United States, 1968* (Section 33). The data on per capita property taxes, welfare payments, and local government spending were all obtained from the *Statistical Abstract of the United States, 1971* (Section 33). The pollution data were assembled from the *Statistical Abstract of the United States, 1968* (Table 262). Finally, the sunshine (climate) data were gathered from the *Statistical Abstract of the United States, 1971* (Table 293).

## *Empirical Results*

The regression results for white migration and for black migration are summarized in Table 1. Overall, the results are fairly encouraging. The values of the coefficients are basically consistent with the hypotheses outlined above. In addition, the values of the $R^2$ were 0.69 for the white migrants and 0.75 for the black migrants. Thus, the model explained over two-thirds of the white net migration and nearly three-fourths of the black net migration to SMSA's over the 1965-1970 time period.

We turn now to the specific regression results for white migration. The income variable performed as hypothesized and was statistically significant at the one percent level. This conforms to the "conventional wisdom". The sunshine variable had the hypothesized sign and was statistically significant at the five

TABLE 1

SENSITIVITY OF MIGRATION TO SMSA'S TO SELECTED VARIABLES,
BY RACE, 1965 - 1970

| Variable | Property Tax (Ti) | Welfare Payments (Wi) | Expenditures (Gi) | Pollution (Pi) | Income (Yi) | Sunshine (Si) | $R^2$ |
|---|---|---|---|---|---|---|---|
| Regression | | | | | | | |
| White Migrants (Mi) | -0.14790** | -0.27696*** | -0.04835 | -0.98944*** | +0.69614*** | +0.70985** | 0.69 |
| Black Migrants (Mi) | +0.01998 | +0.45952*** | +0.60957** | -0.03518 | +0.08031 | +0.09933* | 0.75 |

DF = 48

*** Significant at 0.01 level
** Significant at 0.05 level
* Significant at 0.10 level

percent level. This is consistent with Cebula and Vedder (1973), Greenwood (1969), Gallaway (1969), and Kohn, Vedder, and Cebula (1973).[2] The pollution variable had the correct sign and was statistically significant at the one percent level. Obviously, the "quality of life", as captured by our climate (Si) and pollution (Pi) variables, had an important impact on white migration. Turning now to the policy variables which are central to this paper, we observe that the tax variable had a negative coefficient and was statistically significant at the five percent level. This is consistent with the argument summarized in (3A). Apparently, white migrants prefer areas with lower property tax levels, *ceteris paribus*. The welfare variable had a negative coefficient and was statistically significant at the one percent level. White migrants thus seem to view higher welfare payments as indicative on average of a greater degree of income redistribution and seem to gravitate, as argued in (4B), to areas of lower welfare benefits. Finally, the spending variable had a negative sign but was not statistically significant at even the ten percent level. This is consistent with the argument in (5B), where it was maintained that the impact of this variable is *a priori* unknown due to the fact that higher spending levels may imply not only higher benefits but higher costs (taxes) as well.

Consider now the regression results for black migrants. The income variable had the hypothesized positive coefficient but was not statistically significant at even the ten percent level. This insensitivity to income differentials has been found in other studies (see, for example, Cebula (1973), Cebula and Vedder (1973), Chapin, Vedder, and Gallaway (1970), Gallaway and Cebula (1973), Kohn, Vedder, and Cebula (1973), and Vedder, Chapin, and Gallaway (1970)); however, Gatons and Cebula (1972) have formally shown such an insensitivity to be entirely compatible with conventional theory once the costs of migration have been appropriately accounted for. The sunshine variable had the hypothesized sign and was statistically significant at the ten percen level, a finding again consistent with Cebula and Vedder (1973), Gallaway (1969), and Greenwood (1969). As is clearly evident in Kohn, Vedder, and Cebula (1973), this result is largely a reflection of migration of blacks to the western states as opposed to states in the South. The pollution variable had the correct (negative) sign, but it was not statistically significant at even the ten percent level.[3] As for the policy variables, the tax variable had a positive coefficient but was not statistically significant at even the ten percent level. This is consistent with the argument expressed in (3B) that, due to the relatively small proportion of blacks that own property, the level of property taxes per se is likely to have little impact on black migration. The welfare variable had a positive coefficient and was statistically significant at the one percent level. As argued in (4A), welfare payments may be viewed, overall, as a form of benefit for black migrants and thus areas with higher welfare benefit levels are likely to be more attractive than areas offering lower levels of welfare benefits. This is consistent with the results obtained by Kohn, Vedder, and Cebula (1973) in a study of interstate migration. Finally, the spending variable had the hypothesized positive coefficient and was statistically significant at the five percent level. Apparently, higher levels of local government spending imply higher levels of benefits so that areas with higher local spending levels are more attractive than areas with lower such levels.[4]

[2]Miller (1973, p. 403) has some interesting comments regarding the relationship between migration and climate.

[3]This result was obtained in Cebula and Vedder (1973) and may be related indirectly to expectations of adverse discrimination.

[4]It should be noted that in general the variables in the analysis are not strongly correlated with one another. As for the policy variables per se, the values for the zero order correlation coefficients are $Ti$ and $Wi$ = +.37, $Ti$ and $Gi$ = +.51, and $Wi$ and $Gi$ = +.43.

## *Conclusions*

Tiebout (1956) had suggested that local government policy differentials might exercise a major impact on individuals' locational decisions. The findings in this paper seem to support Tiebout's position. In particular, of the six results (coefficients) obtained in describing the migration-impact of local government policies, only two were not statistically significant determinants of migration. Of the remaining four coefficients, two were statistically significant at the five percent level and two were statisticaly significant at the one percent level. In addition, both white migrants and black migrants were affected by local government policy differentials. Thus, the diversity of local government economic policies exercises a profound impact on the spatial allocation of resources.

A pertinent question to ask is "Does this impact of local government policy differentials on hyman migration lead to a significant misallocation of resources?" Clearly, unless the enormous diversity of policy differentials is very carefully and explicitly planned (so as to elicit a more desirable pattern of migration), the likelihood of a non-optimal (undesirable) migration-impact would seem frighteningly high. This would seem a matter warranting careful examination, but, alas, a matter beyond the immediate scope of this paper.

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